

REMARKS

Claims 1-12 and 17-20 are now pending in the present application. Applicant has carefully studied the Final Office Action. The present Response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of this application are respectfully requested. No new matter has been added by any of the amendments to the specification. Applicant respectfully requests reconsideration and withdrawal of the Examiner's rejections in view of the foregoing amendments and following remarks.

CLAIM REJECTIONS – 35 U.S.C. §103(a)

Claims 1, 3-7, 9-12, 19

The Examiner rejected claims 1, 3-7, 9-12, 17, 19 and 20 under 35 U.S.C. §103(a), as being unpatentable over Hideaki (Japanese Application No. 279856) in view of Nicolas (U.S. Patent No. 4,680,966.) Regarding what Hideaki states, the Examiner has said:

Hideaki discloses an ultrasonic material testing device for measuring sound velocity in a columnar or cylindrical material including a frame (2e/3e/4), transmitting probe 2a attached to the frame via shoe 2b for emitting a longitudinal wave across a chord of the curved specimen, a receiving probe 3a attached to the frame via shoe 3b and a data processing system (clock pulse P, counter C and gate circuit G for calculating travel time t which is compared to the propagation time periods preliminary measured, i.e. expected time where it is indicated that the sound velocity changes are used to detect changes in the material, see translation pp. 1-7 and figs. 1-5.

Even if Hideaki does teach the above, the Examiner then elaborates that Hideaki fails to teach the "lower frequency of the receiving probe":

However, it is noted that Hideaki fails to indicate that the receiving probe has a frequency lower than the transmitting probe. In a related prior art device, Nicolas discloses an apparatus for examining an object by employing a transmitter 10 and a receiver 20 for nondestructive testing by measuring traveling times of waves, see col. 1, lines 6-20 and col. 2, lines 4 et seq. Further, it is indicated that it is advantageous to use transmitting/receiving transducer whose resonant frequency is high than that of the receiving transducer so that objects examined by the ultrasonic waves have a low-pass filter effect. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have employed a receiving transducer with a lower resonant frequency than the transmitting transducer as taught by Nicolas for a receiving transducer having optimum operation is obtained if the difference between the resonance frequencies is suitably chose, see col. 3, lines 40-48.

Three factors are to be considered when making an obviousness rejection under 35 U.S.C.

§103, “(a) the scope and content of the prior art are to be determined; (b) differences between the prior art and the claims at issue are to be ascertained; and (3) the level of ordinary skill in the pertinent art resolved.” *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). Furthermore, secondary considerations may also be taken into consideration in determining the obviousness or nonobviousness of an invention. *Id.*

Here, the Applicant does not believe the Nicolas reference is relevant prior art because the reference is not in the Applicant’s field of endeavor. “The reference must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.” *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992) Here, the Nicolas reference “is useful in the medical field for examining biological tissues and diagnosis as well as for nondestructive testing” (Col. 1, lines 17-20). It is clear that this invention was directed toward the testing of biological materials. The reference to “nondestructive testing” does not, by itself, bring it within the Applicant’s field of endeavor. The Applicant is interested in testing of polymeric materials and it does not logically follow that an inventor of the present invention would have been reasonably expected to solve a problem involving testing of containers by considering a reference involving the examination of biological tissues and diagnosis. Therefore, the Nicolas reference is not within the scope of the prior art for an obviousness rejection and should not be considered to show modification of Hideaki with respect to a “lower frequency of the receiver probe.”

More importantly, Hideaki fails to teach the testing of polymeric containers as the Examiner contends:

Further, Hideaki lacks a teaching for testing *polymeric* materials. Furthermore, official notice is taken that polymeric pipes i.e. polymeric cylindrical materials are old and well-known. Also, Hideaki does teach testing any cylindrical or columnar material using this method/apparatus, therefore it is believed that it would have been obvious to one of ordinary skill in the art at the time of the invention to have applied the Hideaki teaching for testing to any type of cylindrical or columnar material including “polymeric” materials since the principles of operation that have been applied are applicable to any type of material of the shape given.

In establishing a *prima facie* case for obviousness, the Examiner must show (1) a suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) a reasonable expectation of success; and (3) the prior art reference (or references)

must teach or suggest all the claim limits.

Here, Hideaki does not suggest testing of polymeric materials, nor is the knowledge generally available to one of ordinary skill in the art. Additionally, there is no reasonable expectation of success in testing polymeric materials.

First, the Hideaki reference suggests the testing of containers, but only suggests one specific material, steel:

When a **steel material** is used in a high temperature and high pressure atmosphere, carbon and hydrogen are reacted to each other in the steel due to hydrogen corrosion, generating decarbonization and ultra fine cracks and causing **the steel material** to be broken. (Problems of the Prior Art to Be Addressed, page 2, emphasis added)

Looking at the remainder of the Hideaki translation, the word “material” is used numerous times, but never suggests the use of any material other than steel. Even if polymeric cylindrical materials are old and well-known, the Hideaki disclosure fails to mention the use of any other material for testing, much less polymeric materials, and there is no suggestion or teaching to apply the technique to any other materials. Furthermore, while the technique in Hideaki addresses testing for hydrogen corrosion, the technique of the present application addresses ultraviolet degradation, which is not a concern in Hideaki. Therefore, Hideaki fails to suggest any reason to apply the Hideaki reference to “any” material, much less polymeric materials, when the problem Hideaki addressed specifically involved steel material.

Assuming, *arguendo*, that Hideaki did teach or suggest the combination of the technique to polymeric containers, there is no reasonable expectation of success. The “shoes” material that Hideaki refers to is not specified, as the Examiner notes, however it was, at the time of the Applicant’s invention, generally known to use particular materials. For instance, in McKinley et al. (U.S. Patent No. 5,408,882) the invention in that patent used Poly-methyl-methacrylate, PMMA, for the “shoe” as used by Hideaki. Silicone, as the sole component of the shoe was not known for use as a “wedge” or “shoe.” Silicone, by itself, has insufficient rigidity to work properly in L_{CR} ultrasonic techniques. In fact, the Applicant, in paragraph [0025] states:

The distinct advantages of the L_{CR} ultrasonic technique used by the apparatus described here is that the use of the low speed silicone enables excitation of the L_{CR} wave in the polymer . . .

Looking at Figure 3 of the present application, it is easy to see that the PMMA wedge **301**

provides the rigid structure while the Silicone Wave Travel Path 302 serves it's function as a low-speed substance for ultrasonic waves. Absent the Applicant's structure, such a silicone "shoe" would make the Hideaki disclosure inoperable and the Examiner has not provided any specific evidence contradicting this fact.

For this reason, the Examiner has failed to establish a *prima facie* case of obviousness because (1) the Hideaki reference, as well as the other cited references, fails to teach or suggest using the disclosed technique on non-steel containers, and more specifically fails to teach or suggest polymeric containers, and (2) even if the Hideaki reference suggested or taught using the technique on polymeric containers, there would be no reasonable expectation of success without the present Applicant's teachings.

With respect to independent claims 7 and 17, the method of testing a polymeric tank, and the system for evaluating polymeric tanks, the above arguments apply equally to show that Hideaki does not teach or suggest application of the method or system to polymeric containers, and furthermore there is no reasonable expectation of success based on the Hideaki disclosure when applied to polymeric containers.

Furthermore, the Examiner states

As to claims 5 and 11, Hideaki employs shoes 3a and 3b but lacks a suggestion of the material of the shoes. Therefore, since usage of silicon [sic] materials for coupling is old and well-known, the usage of silicone cores is considered a matter of design choice that would have been obvious to one of ordinary skill in the art at the time of the invention to have included as the coupling material and such a selection would obviously be based on the type of material being tested.

The Applicant reiterates that the same reasoning applicable to why silicone would not work in the Hideaki reference establishes that the present application is not obvious based solely on Hideaki and the knowledge of a person with ordinary skill in the art. The Examiner has provided no evidence suggesting silicone would be obvious or that the use of silicone cores would be useful. Failing to provide any evidence, in addition to failing to establish a *prima facie* case of obviousness on claim 1 and 7, the *prima facie* case of obviousness has not been established for claims 5 and 11.

Without conceding the Examiner's remaining arguments, the Applicant has fully responded to the rejection by the Examiner to independent claims 1, 7 and 17 under 35 U.S.C. §103(a). If an independent claim is non-obvious under 35 U.S.C. § 103, then any claim

depending therefrom is non-obvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore all of the remaining claims, claims 2-6, 8-12, and 18-20 are also non-obvious because they depend on claims 1, 7, or 17. The Applicant respectfully requests reconsideration of the rejection and allowance of the claims.

Claims 2, 8, and 18

The Examiner rejected claims 2, 8, and 18 under 35 U.S.C. §103(a), as being unpatentable over Hideaki as discussed previously and further in view of Larue et al (U.S. Patent No. 5,507,183). The Applicant respectfully traverses this rejection and requests reconsideration.

As established previously, independent claims 1, 7 and 17 are non-obvious because the Examiner has failed to make a *prima facie* case of obviousness. The Larue reference does not teach or suggest, and the Examiner has not alleged, any of the elements discussed previously, namely, the silicone shoes, the lower frequency probe, or the testing on polymeric containers. Therefore, the Applicant respectfully requests withdrawal of the rejections directed toward dependent claims 2, 8, and 18.

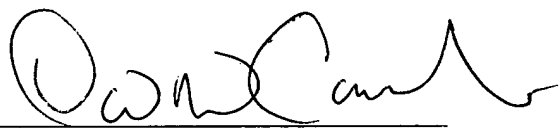
CONCLUSION

It is respectfully urged that the subject application is patentable over references cited by Examiner and is now in condition for allowance. Applicant requests consideration of the application and allowance of the claims. If there are any outstanding issues that the Examiner feels may be resolved by way of a telephone conference, the Examiner is cordially invited to contact David W. Carstens at 972.367.2001.

The Commissioner is hereby authorized to charge any additional payments that may be due for additional claims to Deposit Account 50-0392.

Dated this 23rd day of August, 2005.

Respectfully submitted,

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